

FIG.1

20060220.445100

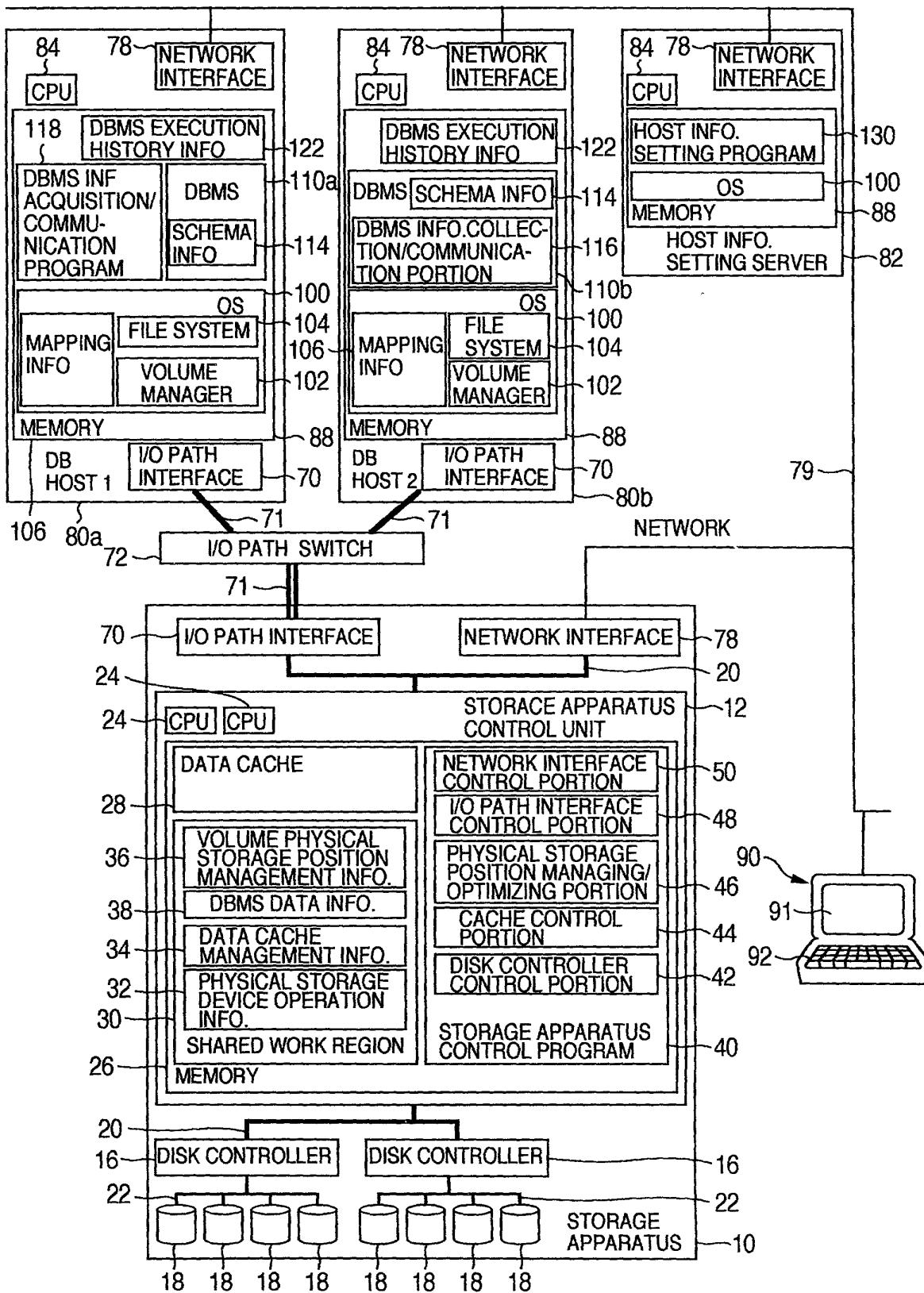


FIG.2

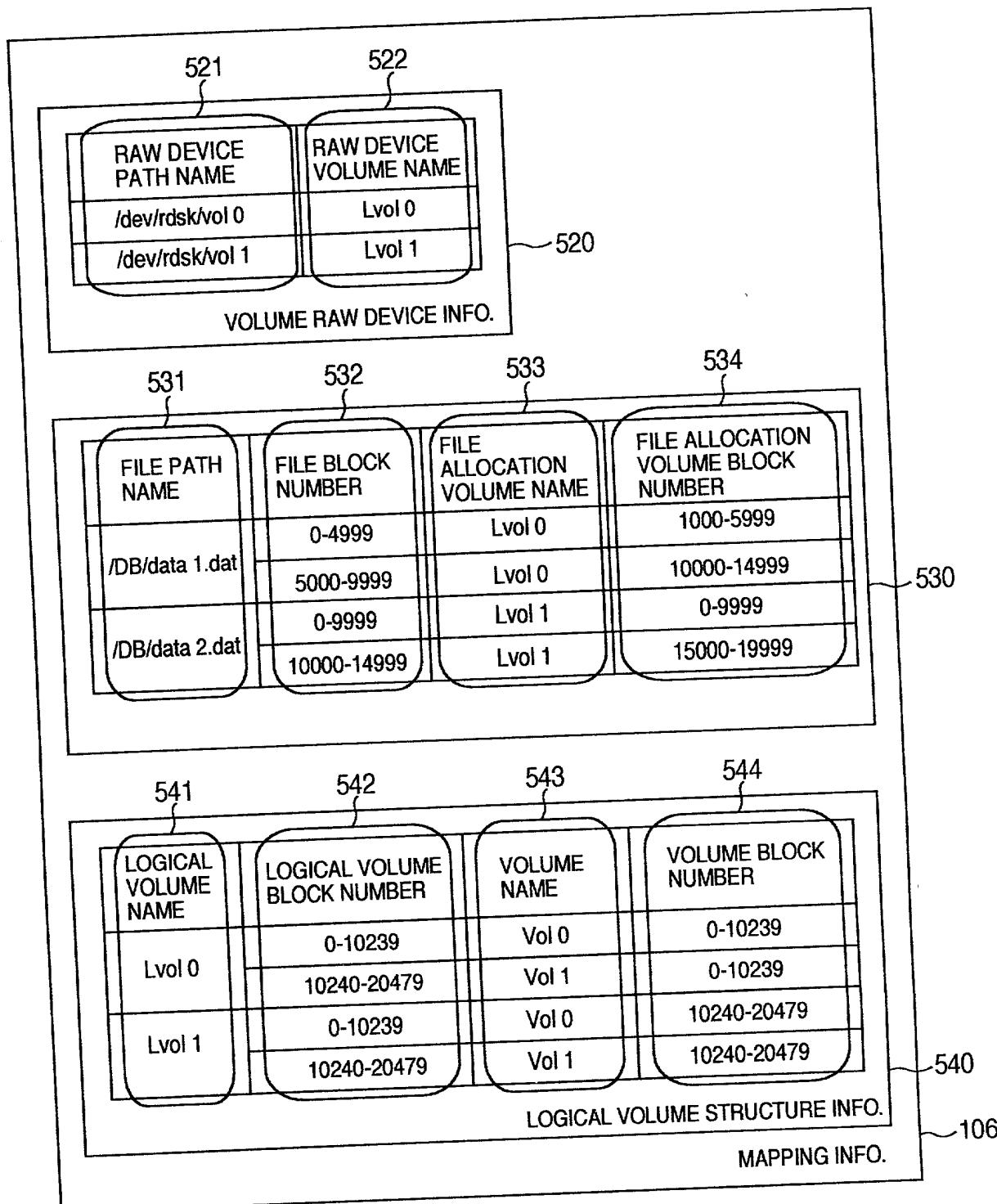


FIG.3

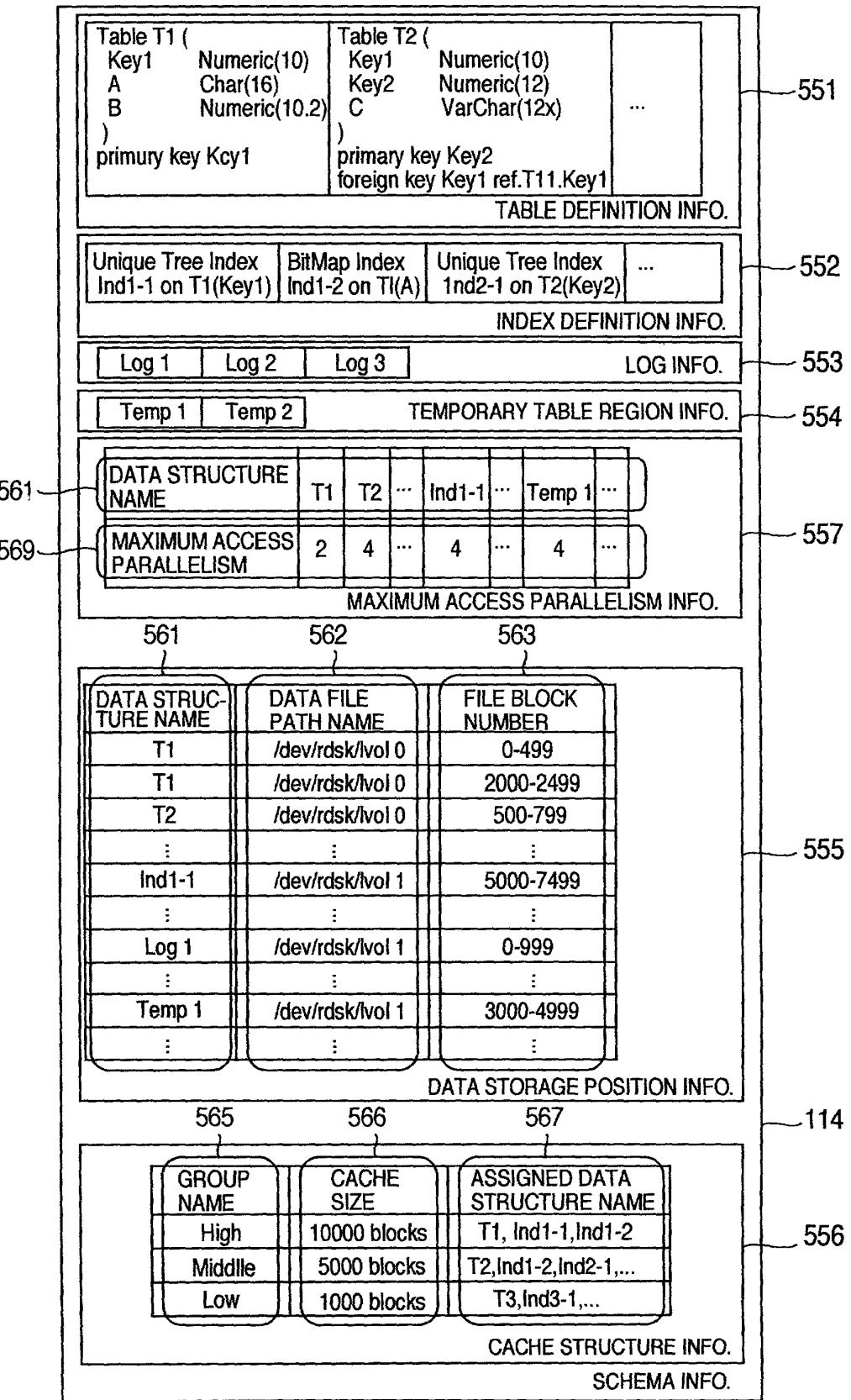


FIG.4

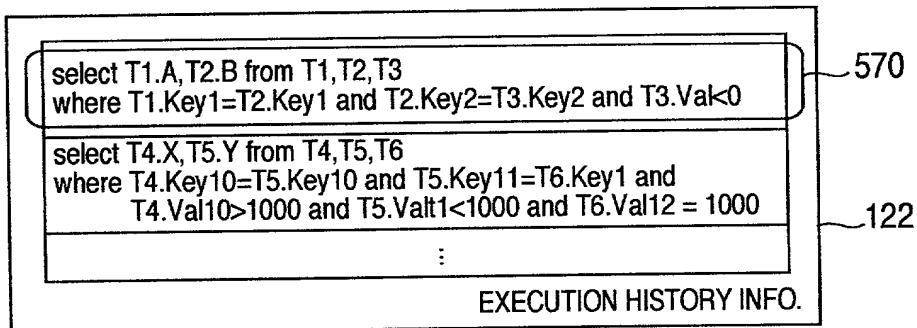


FIG.5

Diagram illustrating FIG.5, showing volume physical storage position main info and volume data migration management info:

501	512	502	514
VOLUME NAME	VOLUME LOGIC BLOCK NUMBER	PHYSICAL STORAGE DEVICE NAME	PHYSICAL BLOCK NUMBER
Vol 0	0-10239 10240-20479	Pdisk 0 Pdisk 1	0-10239 0-10239
Vol 1	0-10239 10240-20479	Pdisk 0 Pdisk 1	10240-20479 10240-20479
⋮	⋮	⋮	⋮
Empty	- -	Pdisk 0 Pdisk 1	40960-122880 40960-122880

VOLUME PHYSICAL STORAGE POSITION MAIN INFO.

Annotations:

- 510 points to the entire table.
- 515 points to the last row.

501	782	783	784	785	786
VOLUME NAME	Migration Logical Block Number	Destination Physical Device Name	Destination Physical Block Number	Difference Management Info.	Copy Pointer
Vol 1	8102-10239	Pdisk 1	38912-40959	0 1 ⋯ 0	9840
Vol 2	0-8791	Pdisk 1	30720-38911	0 0 ⋯ 1	1793
⋮	⋮	⋮	⋮	⋮	⋮

VOLUME DATA MIGRATION MANAGEMENT INFO.

VOLUME PHYSICAL STORAGE POSITION MANAGEMENT INFO.

Annotations:

- 511 points to the second table.
- 36 points to the third table.

FIG.6

The diagram illustrates a table structure for storage device information, divided into several sections:

- VOLUME NAME:** Contains entries for Vol 0, Vol 0, Vol 1, and an ellipsis (...). This section is labeled 501.
- PHYSICAL STORAGE DEVICE NAME:** Contains entries for Pdisk 0, Pdisk 1, Pdisk 0, and an ellipsis (...). This section is labeled 502.
- CUMULATIVE OPERATION TIME:** Contains entries for 23917390, 38902849, 8012891, and an ellipsis (...). This section is labeled 503.
- PREVIOUS CUMULATIVE OPERATION TIME:** Contains entries for 22787638, 38783484, 7592039, and an ellipsis (...). This section is labeled 593.
- OPERATION RATE:** A table with four rows and five columns. The columns represent time intervals: 2000/4/1 12:00~2000/4/1 12:15, 2000/4/1 12:15~2000/4/1 12:30, 2000/4/1 12:30~2000/4/1 12:45, and two additional columns. The first row contains values 20%, 12%, 4%, and an ellipsis (...). Subsequent rows show 15%, 10%, 7%, and an ellipsis (...); 16%, 9%, 5%, and an ellipsis (...); and three ellipses (...). This section is labeled 594.
- PREVIOUS CUMULATIVE OPERATION TIME ACQUIRING TIME:** A label for the time when the previous cumulative operation time was acquired, located at the bottom left of the table area. It is labeled 595.
- PHYSICAL STORAGE DEVICE OPERATION INFO.:** A label for the physical storage device operation information, located at the bottom right of the table area. It is labeled 32.

FIG.7

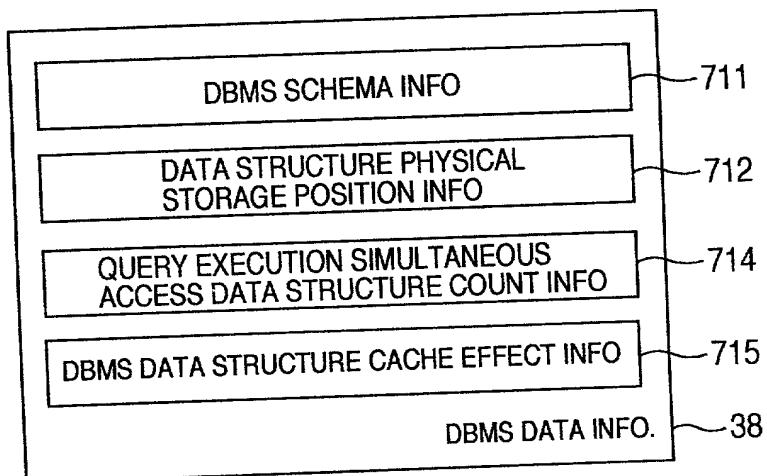


FIG.8

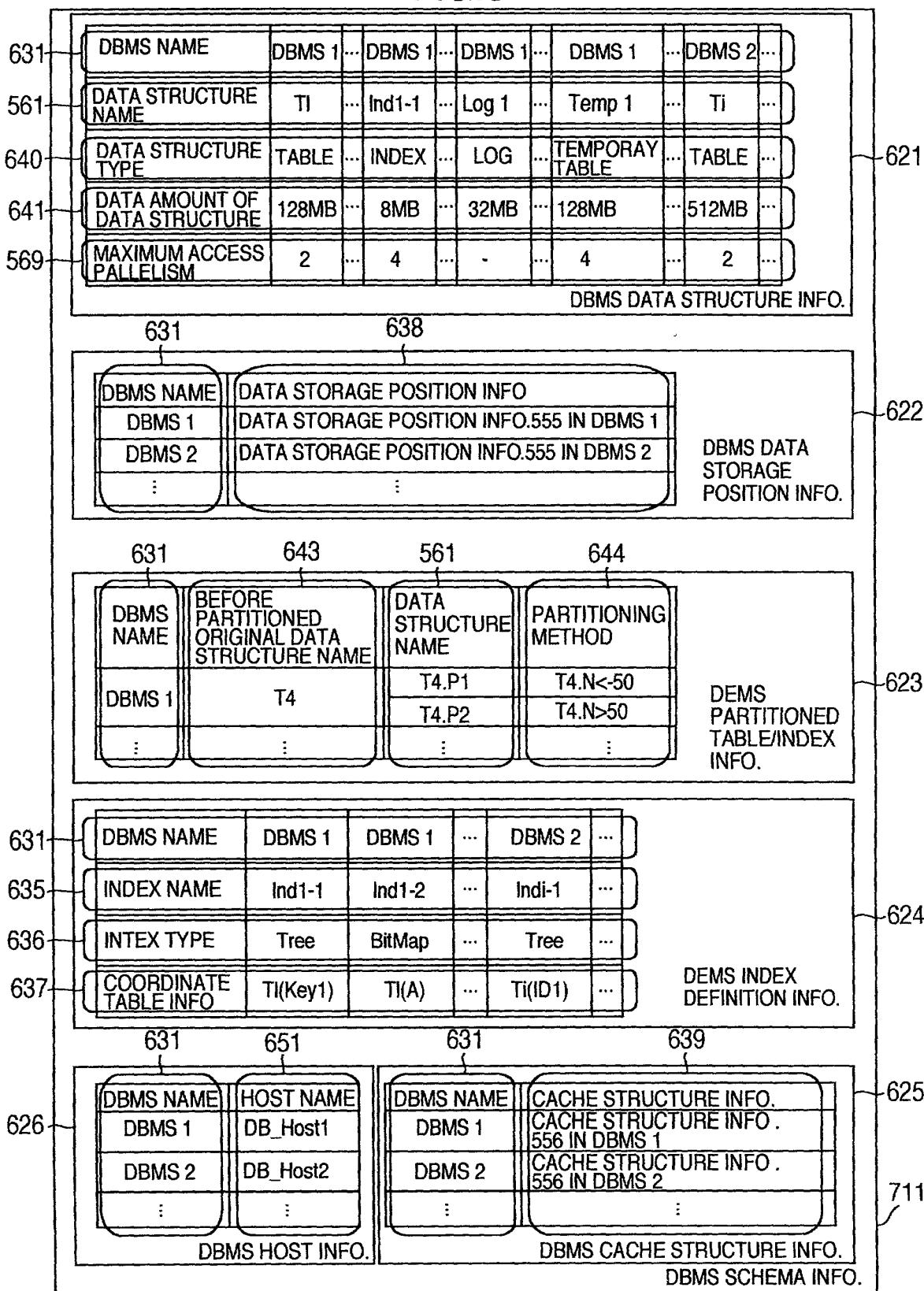


FIG.9

DBMS NAME	DBMS 1	DBMS 1	DBMS 1	...	DBMS 2	...
DATA STRUCTURE NAME	T1	T1	T2	...	Ti	...
VOLUME NAME	Vol 0	Vol 1	Vol 0	...	Vol 2	...
VOLUME LOGICAL BLOCK NUMBER	0.4999	5000-9999	0-239	...	0-9999	...
PHYSICAL STORAGE DEVICE NAME	Pdisk 0	Pdisk 0	Pdisk 0	...	Pdisk 1	...
PHYSICAL BLOCK NUMBER	0.4999	10240-15239	10000-10239	...	20480-30479	...
DATA STRUCTURE PHYSICAL STORAGE POSITION INFO.						

631 561 501 512 502 514 712

FIG.10

DBMS NAME	DATA STRUCTURE NAME A	DATA STRUCTURE NAME B	COUNT
DBMS 1	T1	Ind 1-1	2789
:	:	:	:
DBMS 2	Ti	Ind i-1	829
:	:	:	:

631 701 702 703 714

QUERY EXECUTION SIMULTANEOUS
ACCESS DATA STRUCTURE COUNT INFO.

FIG.11

DBMS NAME	DATA STRUCTURE NAME	CACHE EFFECT INFO	
DBMS 1	T1	THERE IS	
DBMS 1	Ind1-1	THERE IS	
DBMS 1	T2	THERE IS NO	
:	:	:	
DBMS 2	Ti	THERE IS	
:	:	:	

DBMS DATA STRUCTURE CACHE EFFECT INFO.

631 561 733 715

FIG.12

2002-04-25 10:00

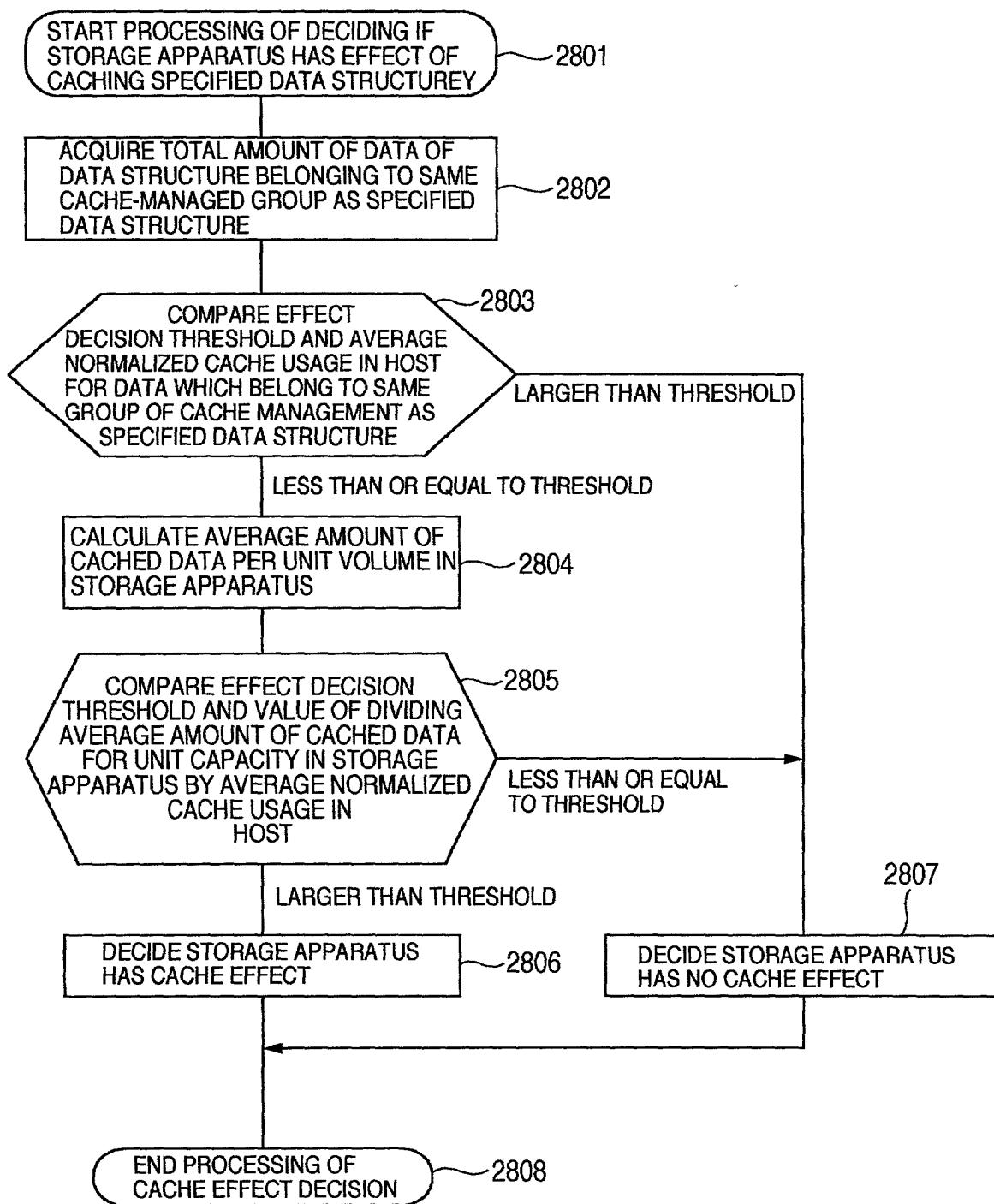


FIG.13

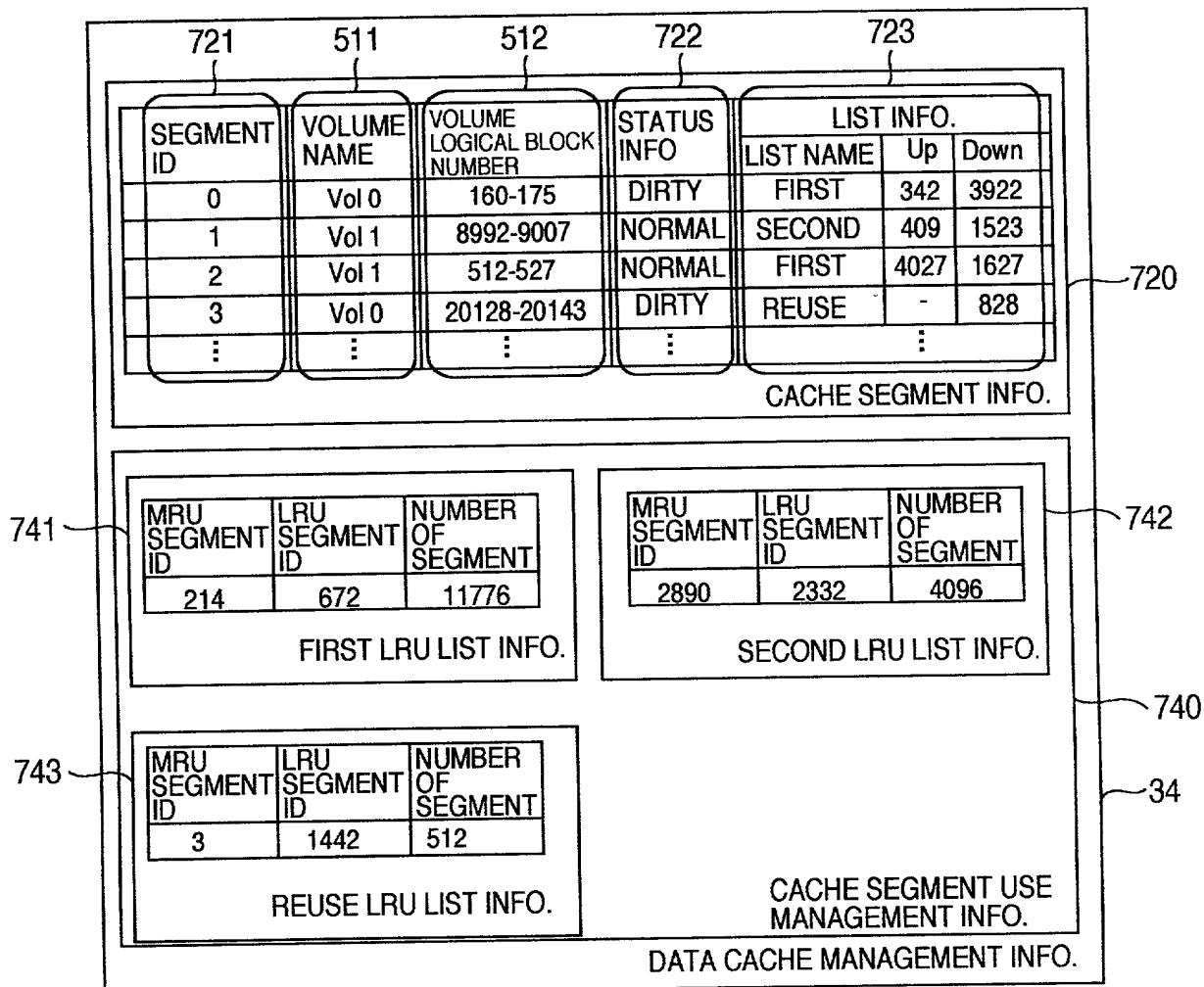


FIG.14

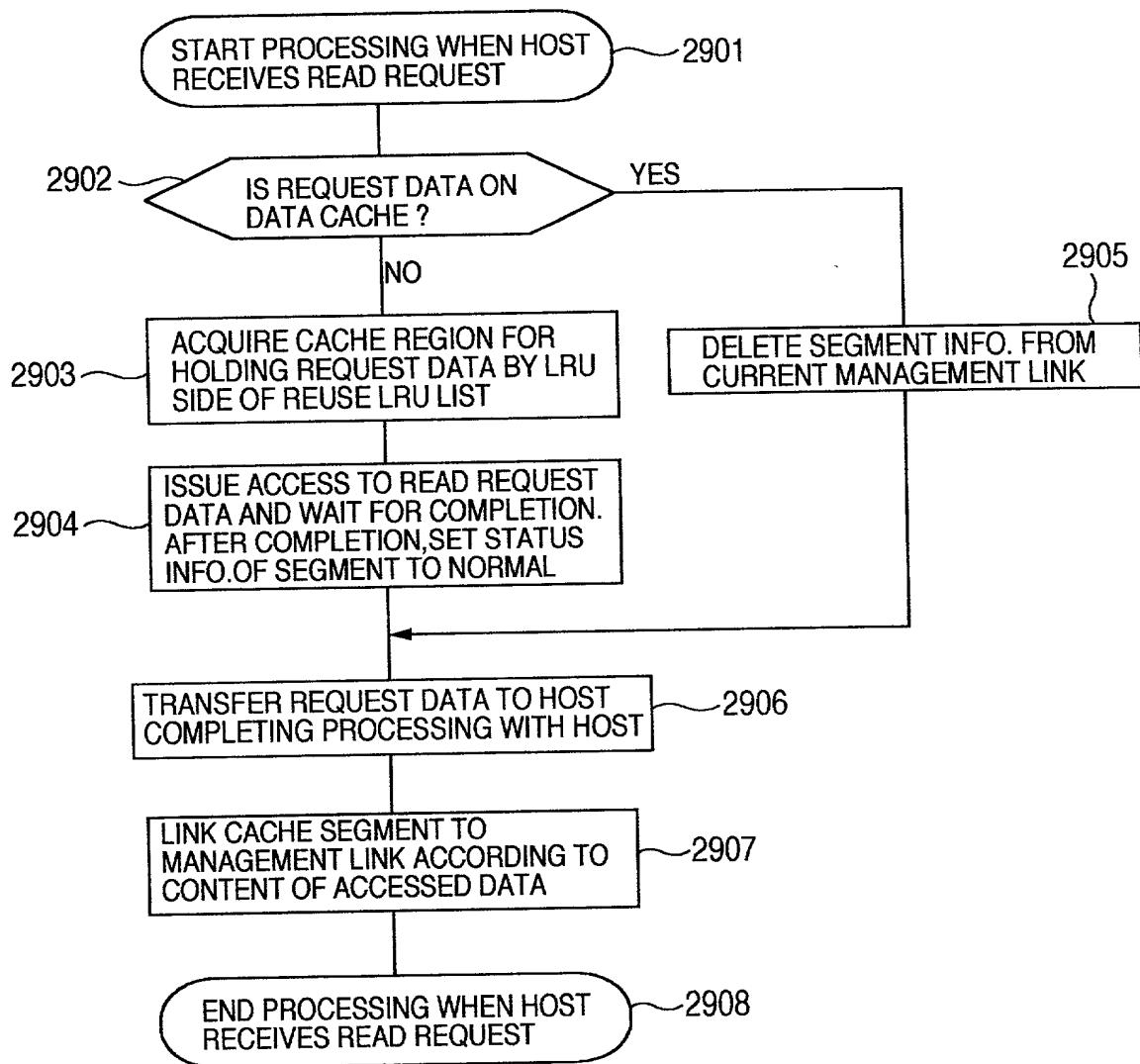


FIG.15

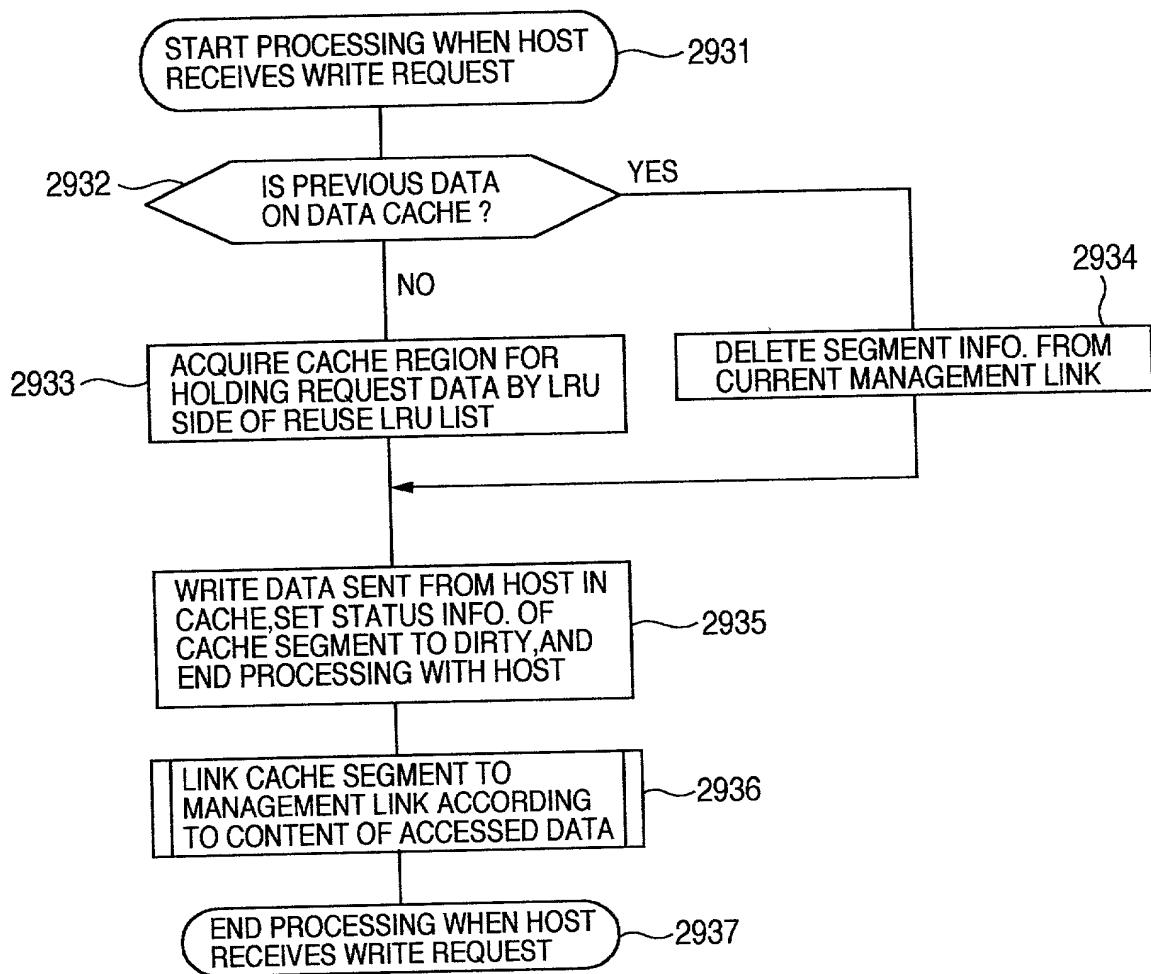


FIG.16

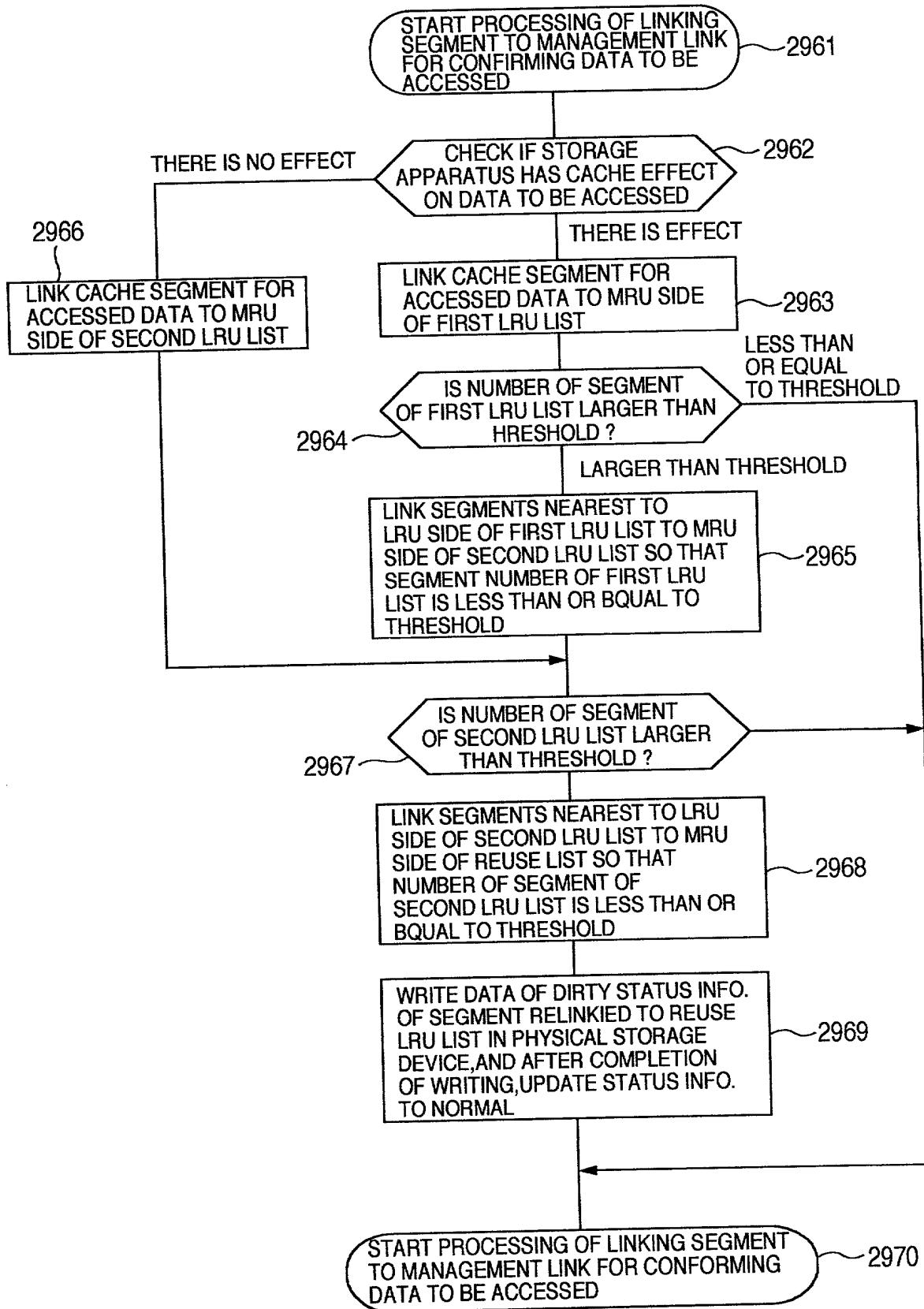


FIG.17

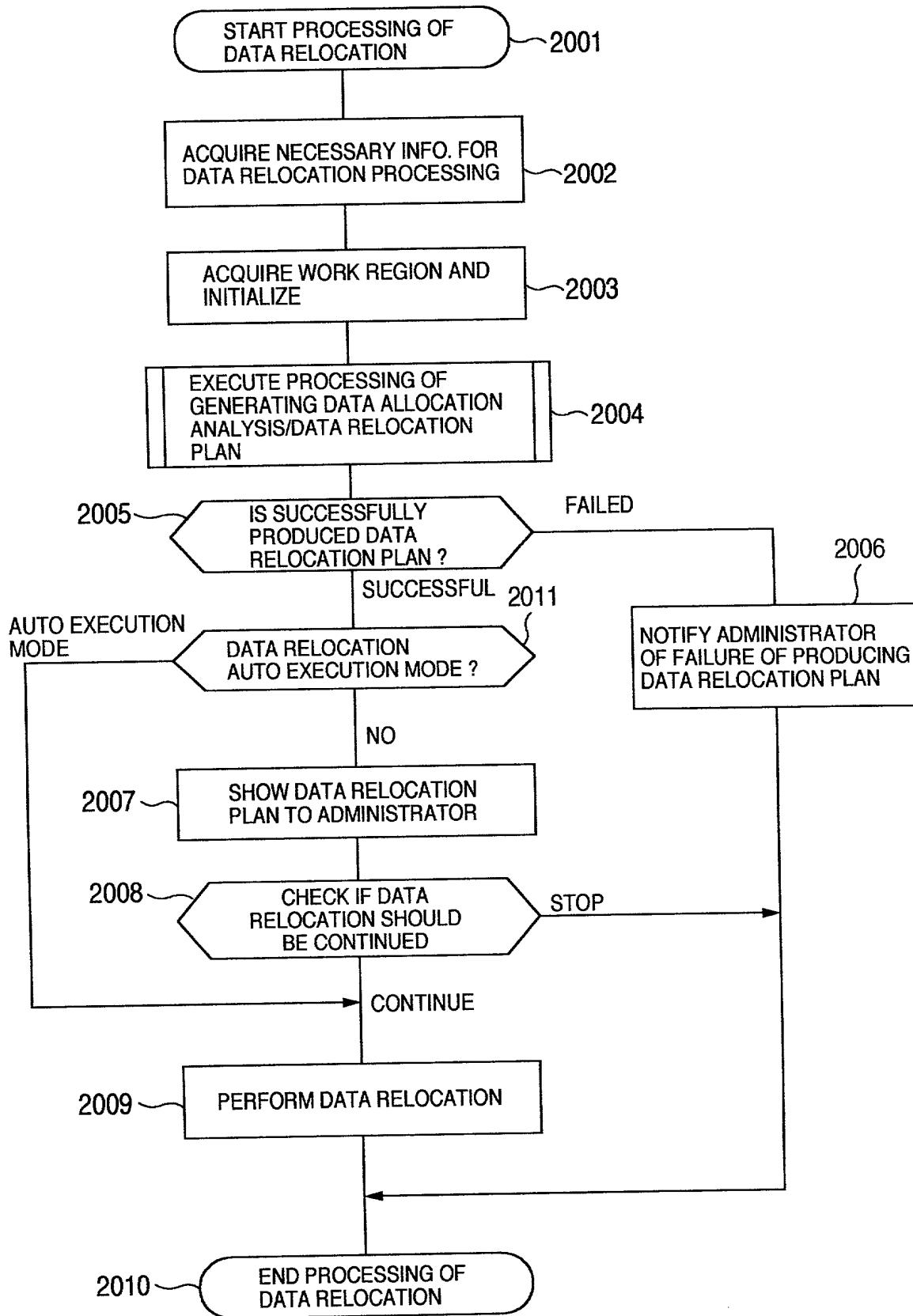


FIG.18

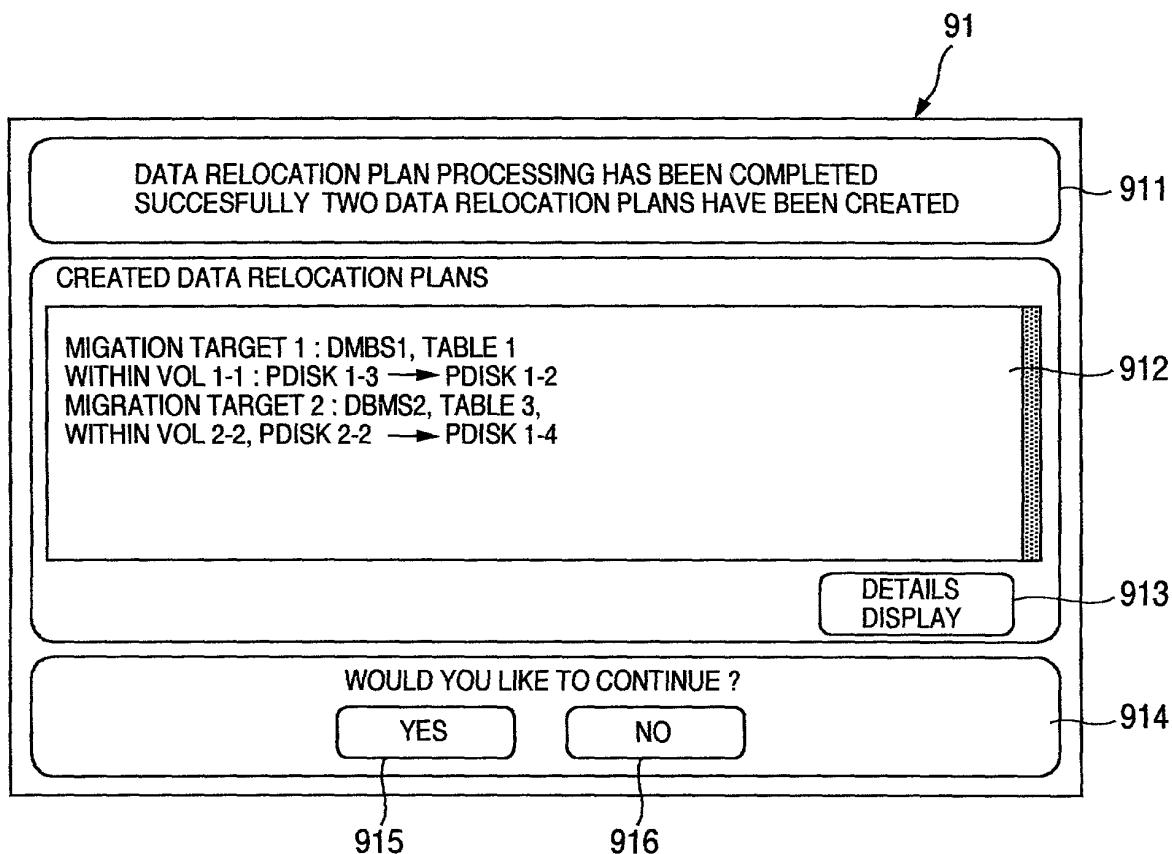


FIG.19

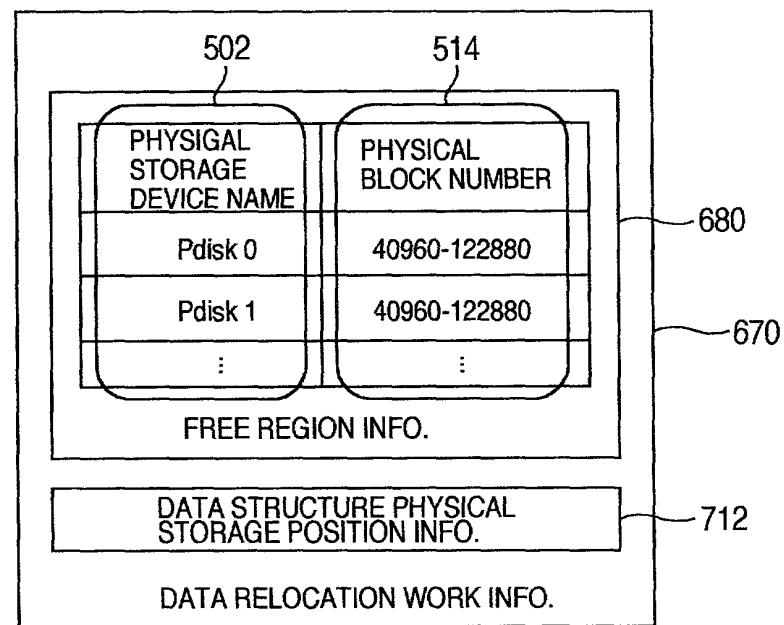


FIG.20

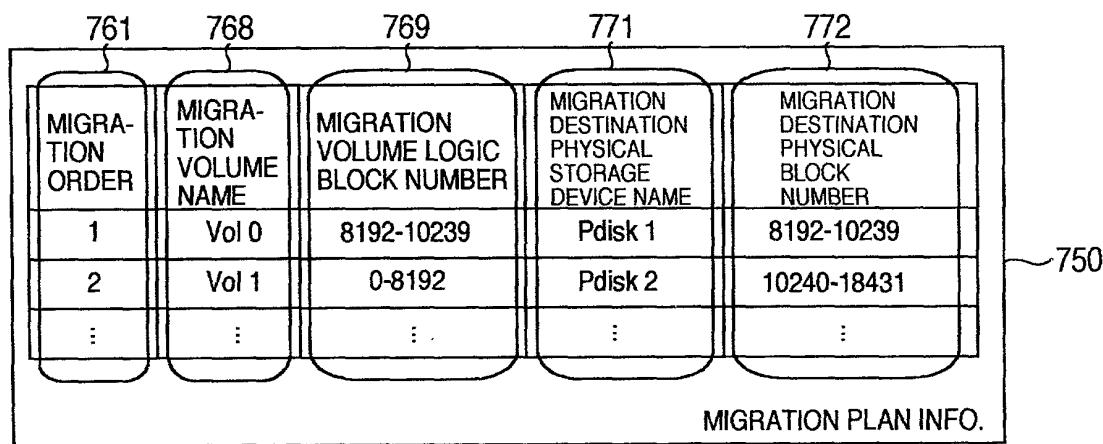


FIG.21

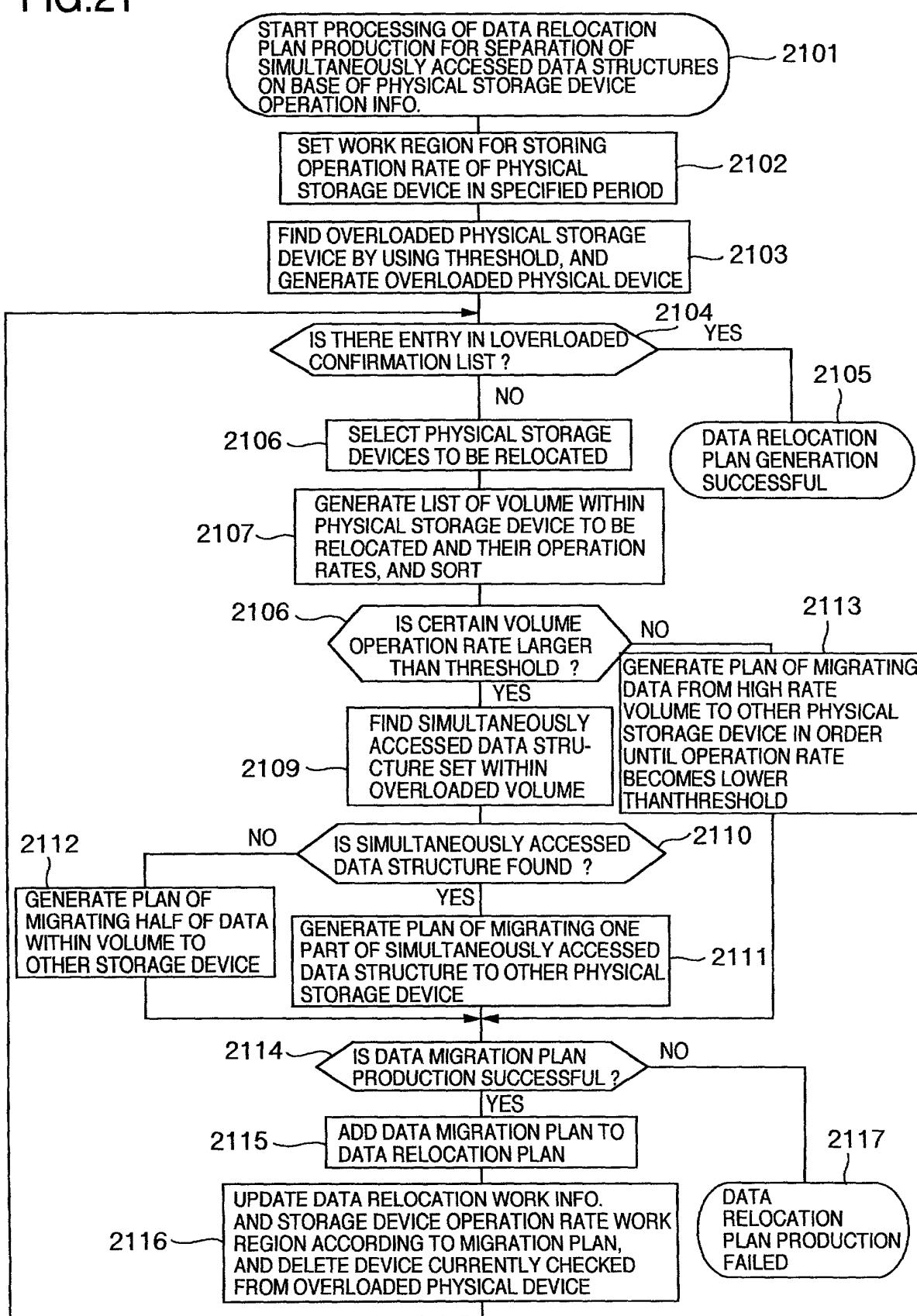


FIG.22

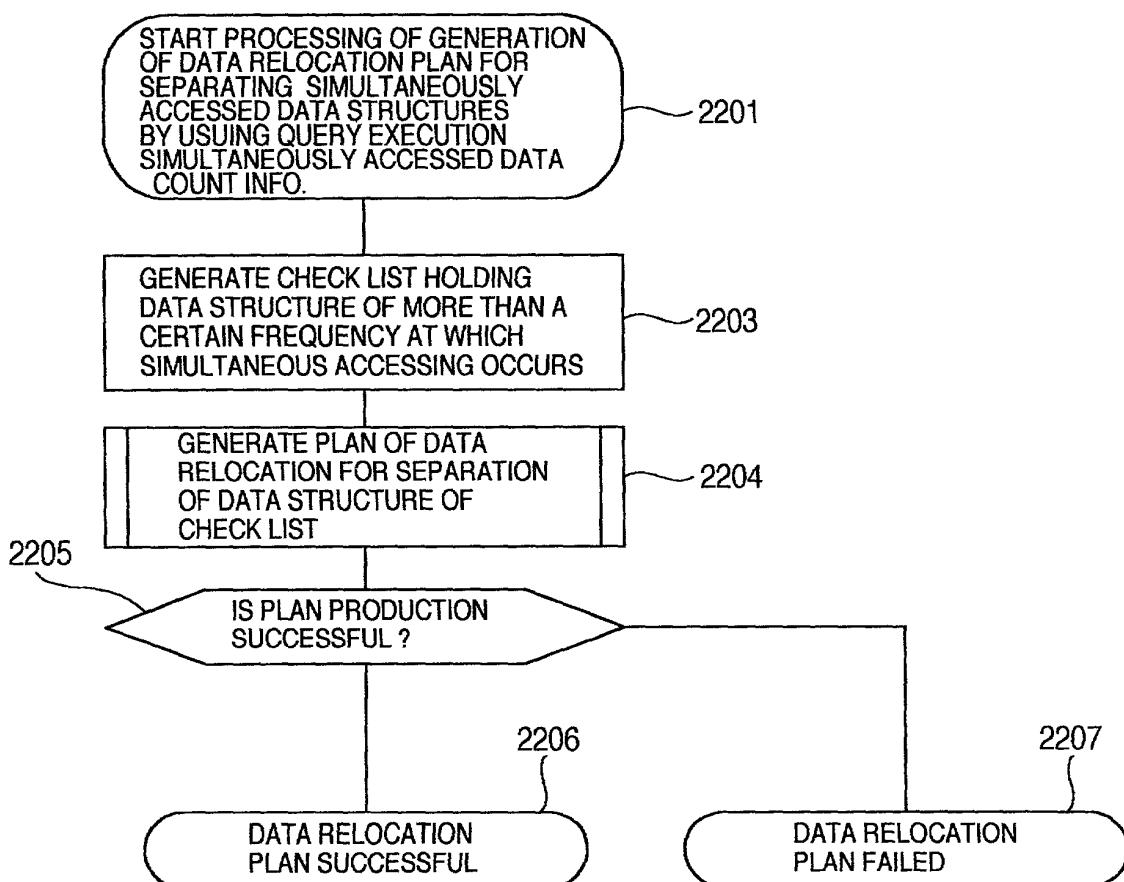
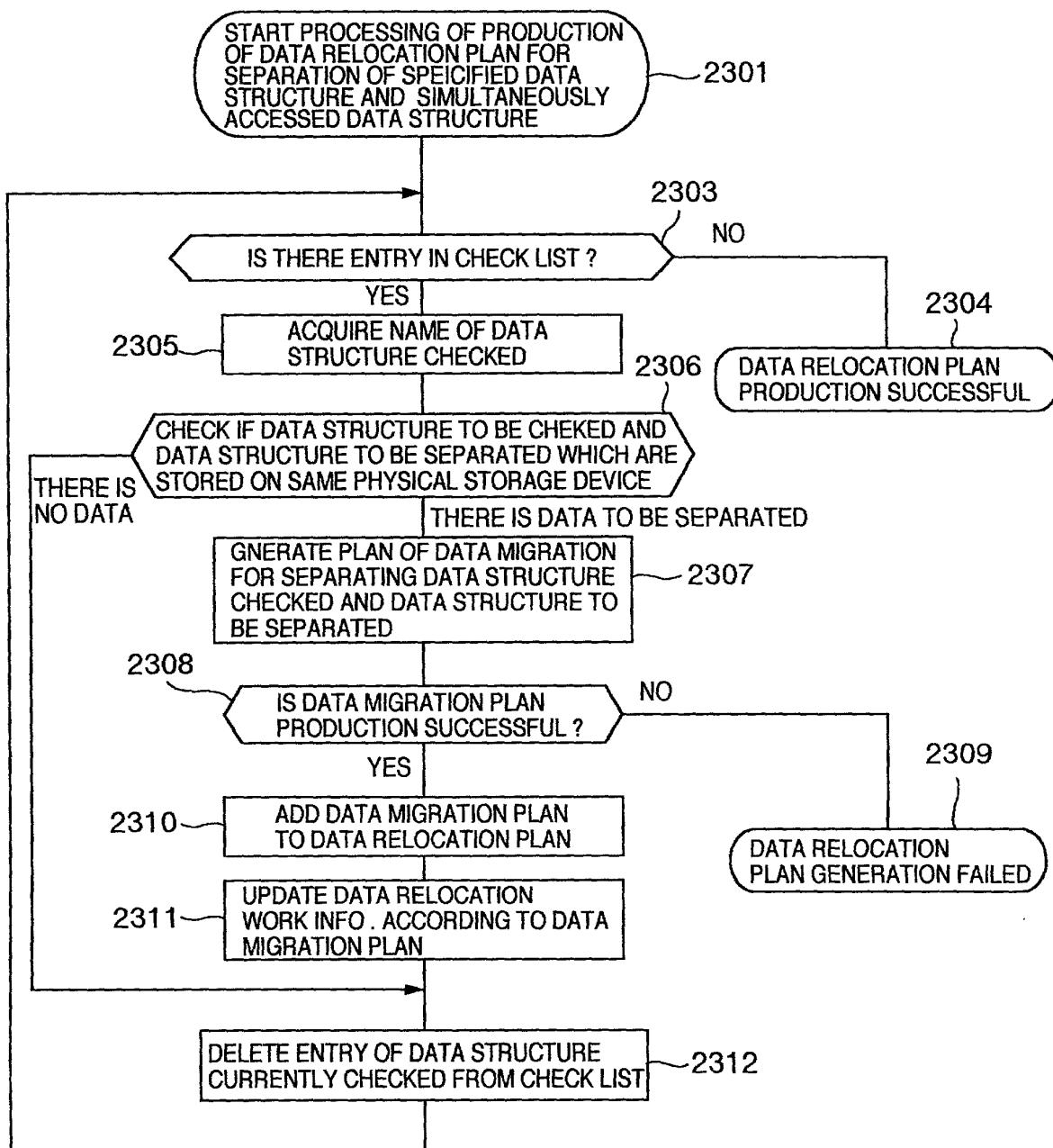


FIG.23



100035474-02020

FIG.24

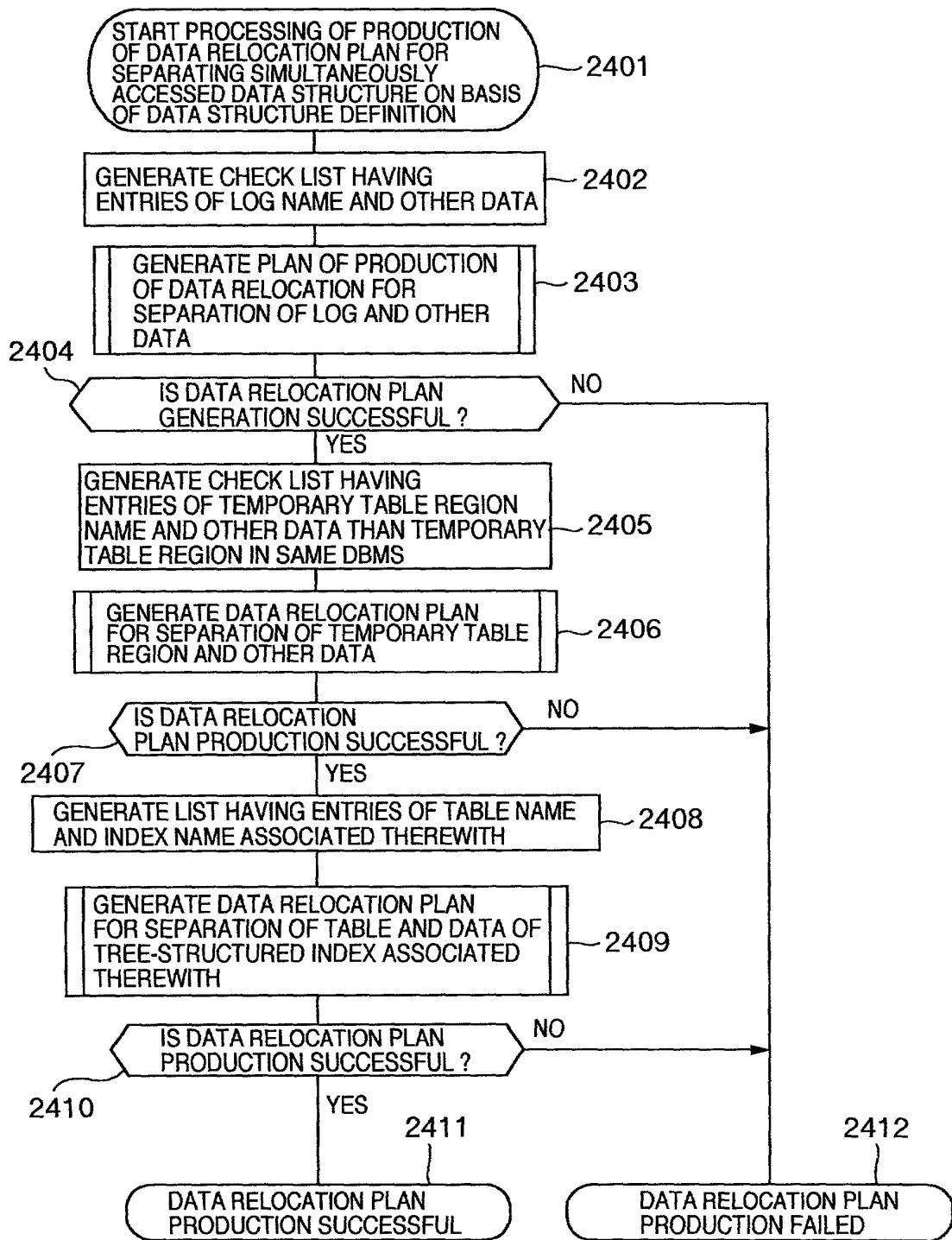


FIG.25

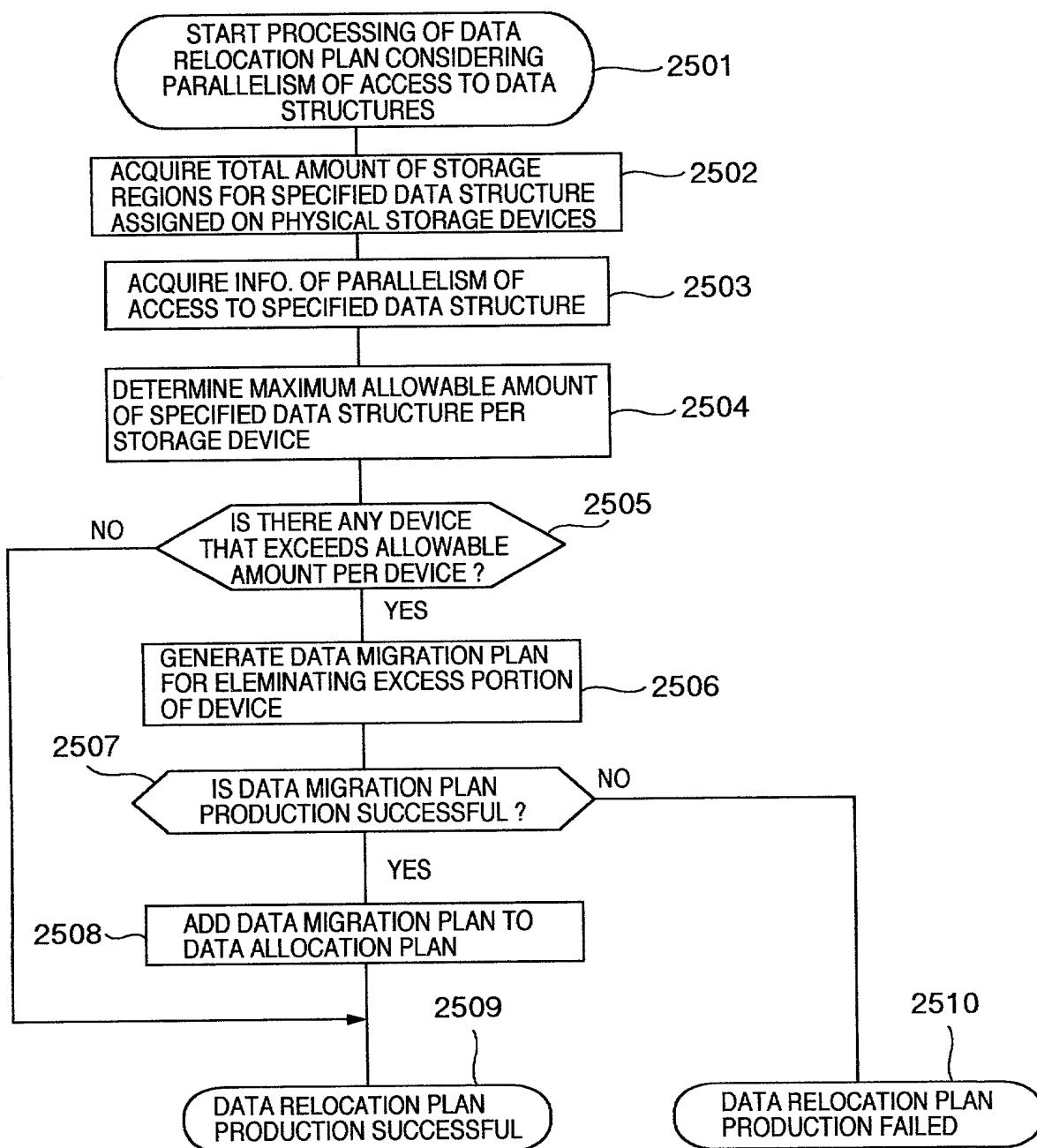


FIG.26

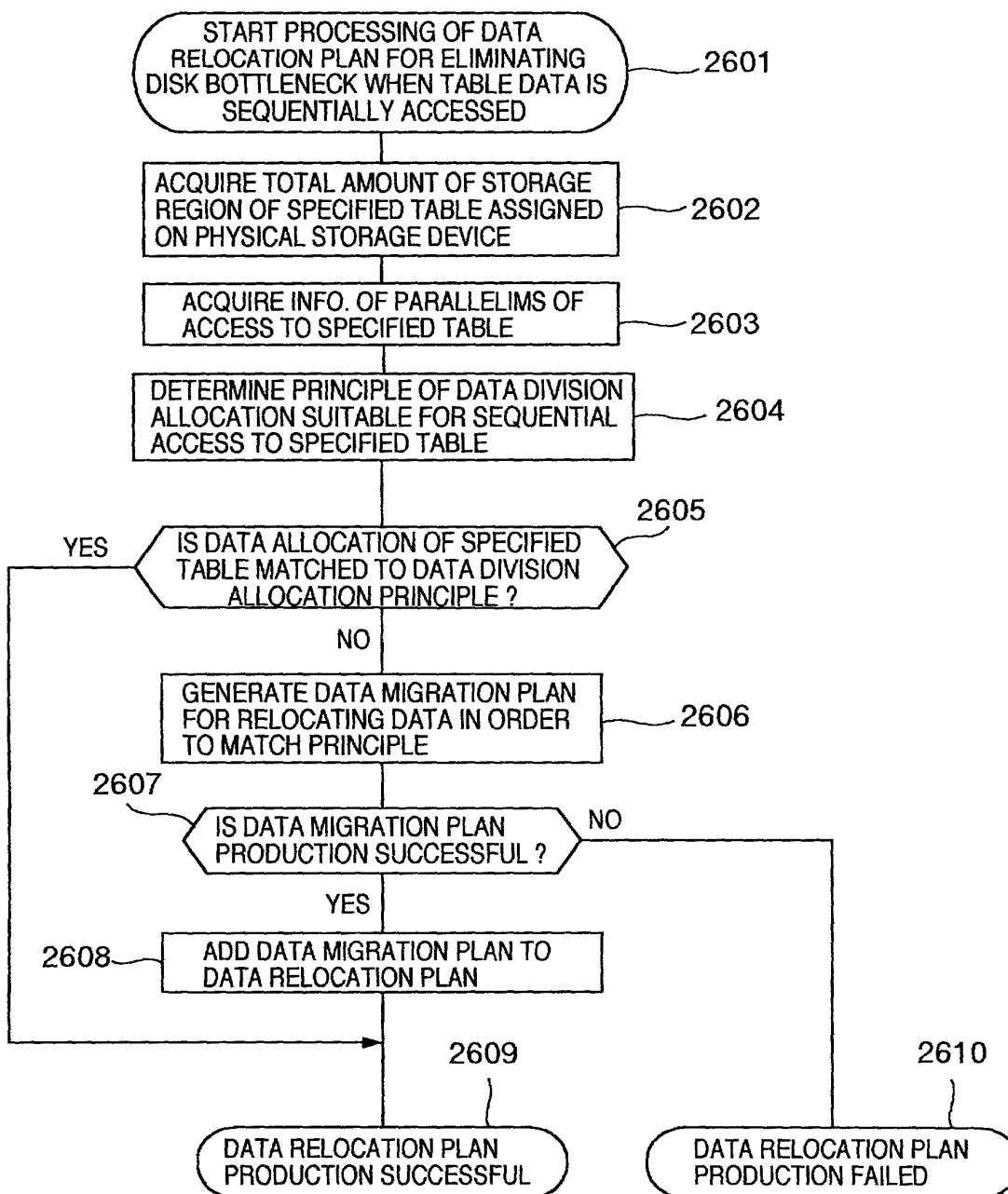


FIG.27

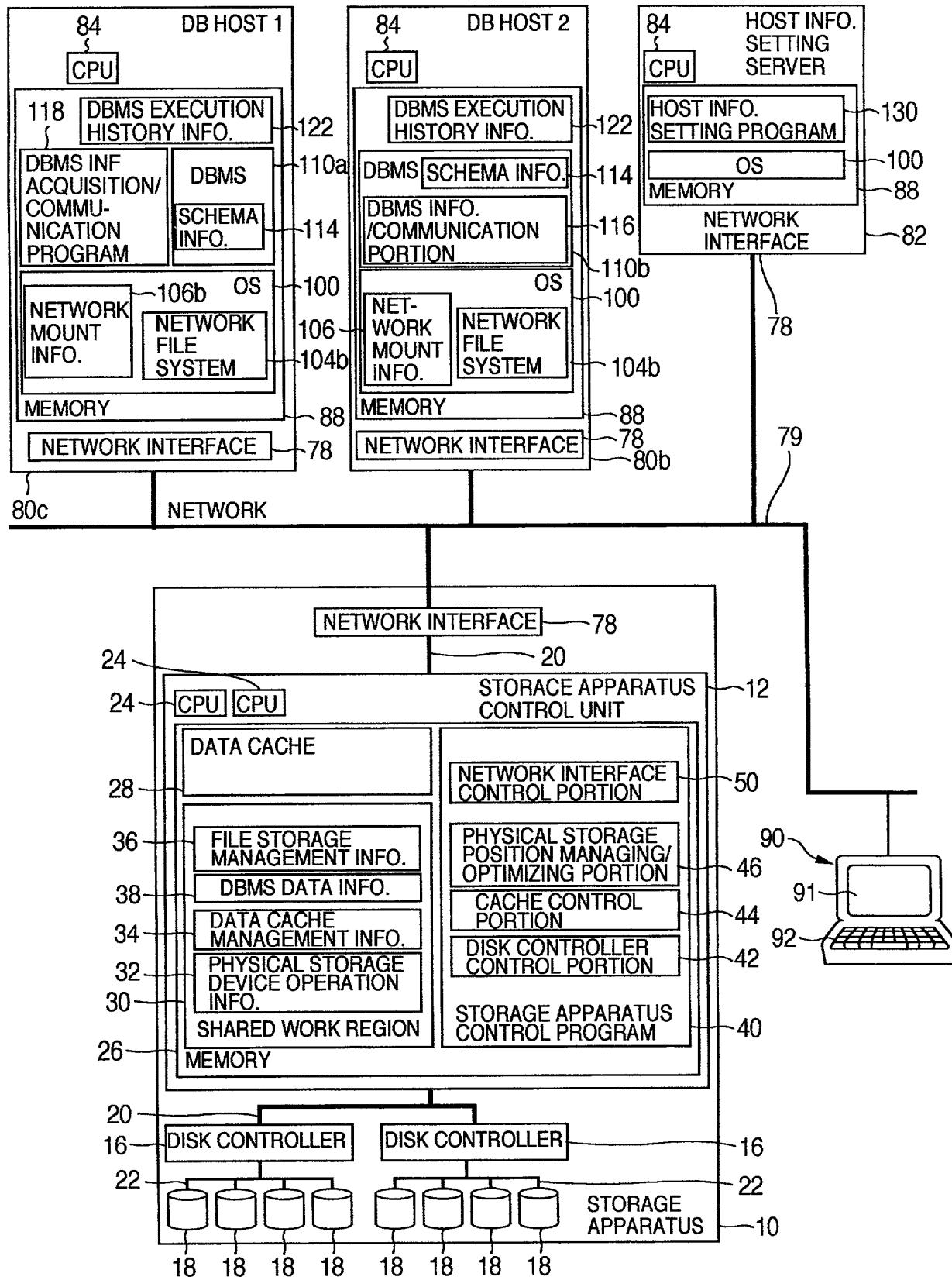


FIG.28

The diagram shows a structure labeled "NETWORK MOUNT INFO." It consists of three columns of data, each enclosed in rounded rectangles. The first column is labeled "STORAGE DEVICE NAME" and contains three entries: "NAS 0", "NAS 0", and "NAS 0". The second column is labeled "FILE SYSTEM NAME" and contains three entries: "FS 0", "FS 1", and "FS 2". The third column is labeled "MOUNT POINT" and contains three entries: "/NAS 0/FS 0", "/NAS 0/FS 1", and "/NAS 0/FS 2". Above the first column is the reference number "583". Above the second column is the reference number "1001". Above the third column is the reference number "1031". A bracket on the right side of the structure is labeled "106b".

STORAGE DEVICE NAME	FILE SYSTEM NAME	MOUNT POINT
NAS 0	FS 0	/NAS 0/FS 0
NAS 0	FS 1	/NAS 0/FS 1
NAS 0	FS 2	/NAS 0/FS 2

NETWORK MOUNT INFO.

FIG.29

The diagram consists of two tables sharing a common vertical axis of reference numbers.

FILE PHYSICAL STORAGE POSITION INFO. (Top Table)

1001	1002	1003	502	514
FILE SYSTEM NAME	FILE PATH NAME	FILE BLOCK NUMBER	DEVICE NAME	PHYSICAL BLOCK NUMBER
FS 0	/control.dat	0-1023	Pdisk 0	4096-5119
	/wk/wk 1.dat	0-2047	Pdisk 1	1024-3071
	/wk/wk 1.dat	2048-4095	Pdisk 0	8192-10239
Empty	-	Pdisk 0	40960-122880	
FS 1	/data1.dat	0-4999	Pdisk 1	10240-15239
:	:	:	:	:

A bracket on the right side of the table is labeled "510b". A bracket below the table is labeled "1015".

FILE DATA MIGRATION MANAGEMENT INFO. (Bottom Table)

1001	1002	1021	783	784	785	786
FILE SYSTEM NAME	FILE PATH NAME	Migration FILE BLOCK NUMBER	DESTINATION DEVICE NAME	DESTINATION PHYSICAL BLOCK NUMBER	Difference MANAGEMENT INFO.	COPY POINTER
FS 1	/data 1.dat	8192-10239	Pdisk 1	38912-40959	0 1 0	9840
FS 2	/data A.dat	0-8191	Pdisk 1	30720-38911	0 0 1	1792

A bracket on the right side of the table is labeled "511b". A bracket below the table is labeled "36b".

FILE STORAGE MANAGEMENT INFO.

FIG.30

The diagram shows a table structure with various fields and associated labels:

FILE SYSTEM NAME	FS 0	FS 0	FS 1	...	1001	
PHYSICAL STORAGE DEVICE NAME	Pdisk 0	Pdisk 1	Pdisk 0	...	502	
CUMULATIVE OPERATION TIME	23917390	38902849	8012891	...	503	
PREVIOUS CUMULATIVE OPERATION TIME	22787638	38783484	7592039	...	593	
OPERATION RATE	2000/4/1 12:00~ 2000/4/1 12:15	20%	12%	4%	...	594
	2000/4/1 12:15~ 2000/4/1 12:30	15%	10%	7%	...	
	2000/4/1 12:30~ 2000/4/1 12:45	16%	9%	5%	...	
	:	:	:	:	:	
PREVIOUS CUMULATIVE OPERATION TIME ACQUIRING TIME			PHYSICAL STORAGE DEVICE OPERATION INFO.			32b
						595

FIG.31

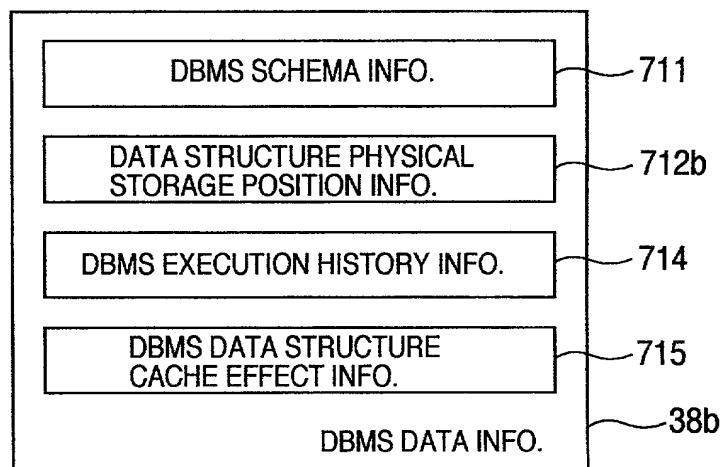


FIG.32

DBMS NAME	DBMS 1	DBMS 1	DBMS 1	...	DBMS 2	...	631
DATA STRUCTURE NAME	T1	T1	T2	...	Ti	...	561
FILE SYSTEM NAME	FS 1	FS 1	FS 1	...	FS 2	...	1001
FILE PATH NAME	/data 1.dat	/data 1.dat	/data 2.dat	...	/data i.dat	...	1002
FILE BLOCK NUMBER	0-4999	5000-9999	0-4999	...	0-9999	...	1003
PHYSICAL STORAGE DEVICE NAME	Pdisk 1	Pdisk 0	Pdisk 1	...	Pdisk 2	...	514
PHYSICAL BLOCK NUMBER	10240-15239	10240-15239	15240-20239	...	20480-30479	...	502
DATA STRUCTURE PHYSICAL STORAGE POSITION INFO.							~712b

FIG.33

SEGMENT ID	FILE SYSTEM NAME	FILE PATH NAME	FILE BLOCK NUMBER	STATUS INFO.	LIST INFO.	721	1001	1002	1003	722	723
0	FS 1	/data 1.dat	160-175	DIRTY	FIRST	342	3922				
1	FS 2	/data i.dat	8992-9007	NORMAL	SECOND	409	1523				
2	FS 1	/data 1.dat	512- 527	NORMAL	FIRST	4027	1627				
3	FS 0	/control.dat	0-15	WRITE	REUSE	-	828				
:	:	:	:	:	:						

CACHE SEGMENT INFO.

741	MRU SEGMENT ID	LRU SEGMENT ID	NUMBER OF SEGMENT	742
	214	672	11776	
	FIRST LRU LIST INFO.			

743	MRU SEGMENT ID	LRU SEGMENT ID	NUMBER OF SEGMENT	740
	3	1442	512	
	REUSED LRU LIST INFO.			

744	MRU SEGMENT ID	LRU SEGMENT ID	NUMBER OF SEGMENT	34b
	2890	2332	4096	
	SECOND LRU LIST INFO.			

CACHE SEGMENT USE MANAGEMENT INFO.

DATA CACHE MANAGEMENT INFO.

FIG.34

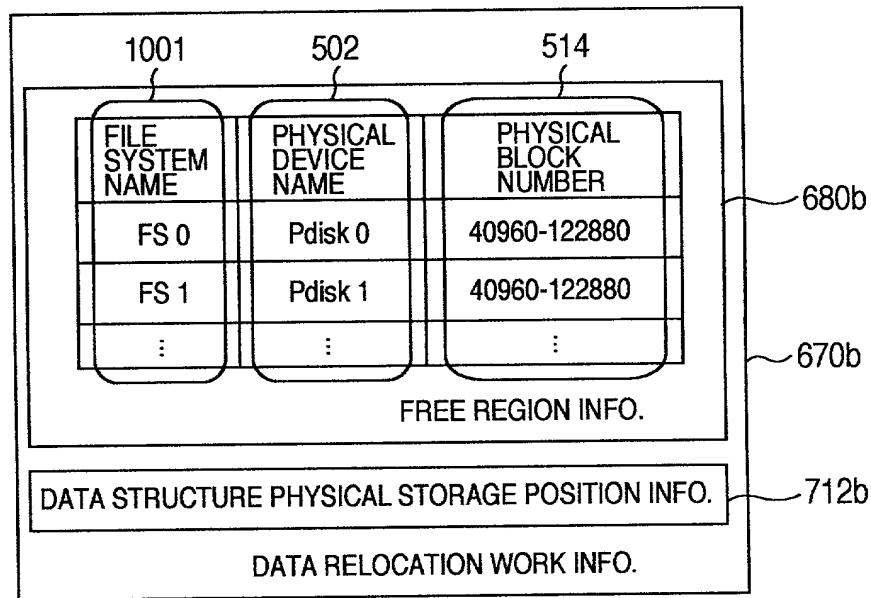


FIG.35

The diagram shows a table for Migration Plan Info. The columns are labeled with identifiers above them:

761	1101	1102	1103	771	772
Migration Order	Migration File System Name	Migration File Path Name	Migration File Block Number	Destination Device Name	Destination Physical Block Number
1	FS 0	/control.dat	0-1023	Pdisk 1	8192-9215
2	FS 2	/data 2.dat	0-4095	Pdisk 3	10240-14335
:	:	:	:	:	:

MIGRATION PLAN INFO. is labeled at the bottom right of the table area.

A bracket labeled 750b spans the width of the table below the 772 column.